DEALER EDITION

Electricity on the Farm

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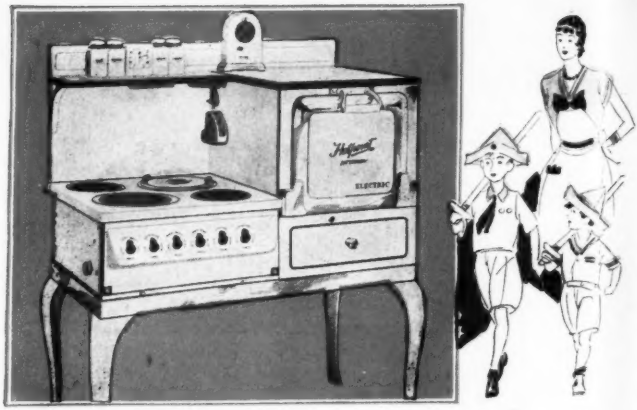
DEALERS: The electrical idea is spreading rapidly. More than 120,000 farm families will see this month's regular edition of Electricity on the Farm. Don't let your trade get ahead of you.



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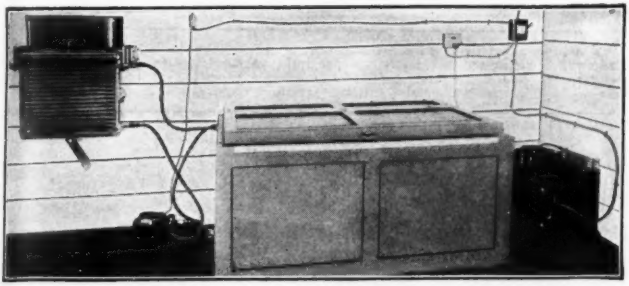
World's Largest Manufacturer of Electric Ranges and Household Electric Heating Appliances

Kelvinator-Equipped Milk Coolers

Now Available in Eight [8] Sizes



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THE RELIABLE

KELVINATOR

Electricity on the Farm

Vol. 2 JULY 1929 No. 7

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THE extension of electric service lines into rural communities, brings to the farmer welcome opportunities for making work easier, life happier and labor more profitable. No contribution that electricity can supply is greater perhaps, than the gift of a dependable automatic water system.

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FIG. 2511

FIG. 2510

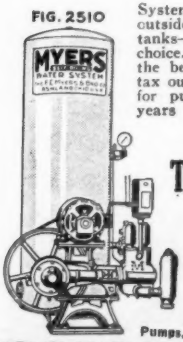

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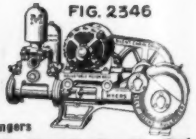
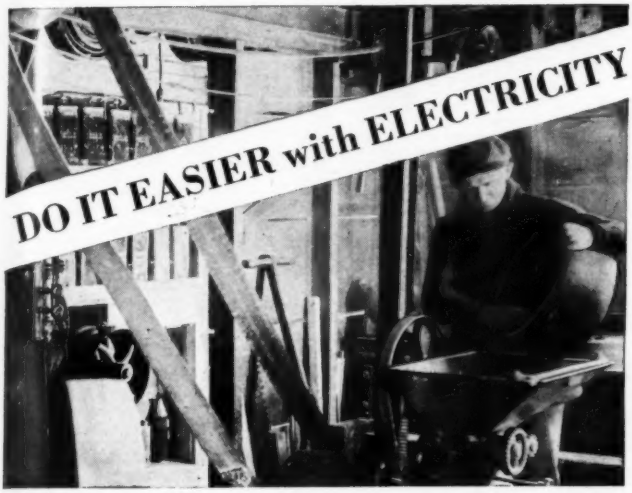
FIG. 2346



Pumps, Water Systems, Hay Tools, Door Hangers



THINK how much time and effort an electric feed grinder would save you! No more bagging the grain—lugging it to the mill—carrying it back—paying for the grinding.

This is only one of many jobs a Westinghouse motor will do for you . . . saving you time, money and effort. These husky motors work without tiring, without attention, and without expense for upkeep.

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Electric motors, electric ranges, electric home appliances of all kinds . . . when they carry the Westinghouse trade-mark you know they are good for years and years of hard service.

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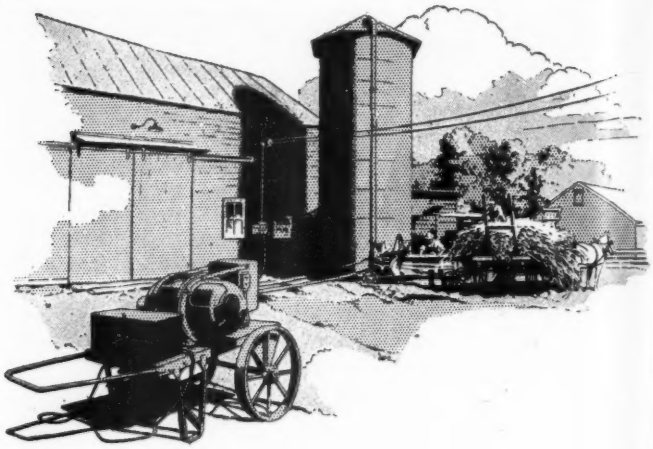


Where Motors *are cheaper than* Muscle

Let the electric motor fill your silo—its cheaper, easier, swifter. And this is just one of the many applications where G-E motors, controllers, and other electric equipment cut costs and labor.

Electric grain elevators, motorized grinders, huskers, and shredders will save four-fifths of the time you now spend on these jobs. G-E motors can economically pump your water, do your threshing, milk your cows, separate the cream, and sharpen your tools.

For farm households, G-E MAZDA lamps, refrigerators, fans, and cooking and heating appliances are economical labor savers.

If you are located on or near an electric power line, ask the power company for complete information concerning the possible uses of electricity on your farm.

Tune in on the General Electric Special Weekly Farm Program on WGY (Schenectady), KOA (Denver), KGO (Oakland). In addition, every Saturday evening at 8 P.M., Eastern Standard Time, the "General Electric Hour" is broadcast over a nation-wide N.B.C. Network.

GENERAL ELECTRIC

200-227D

Electricity on the Farm

Vol. 2 JULY, 1929 No. 7

What About the Electric Range?

The question is frequently asked: "Is the electric range really practical for farm use?"

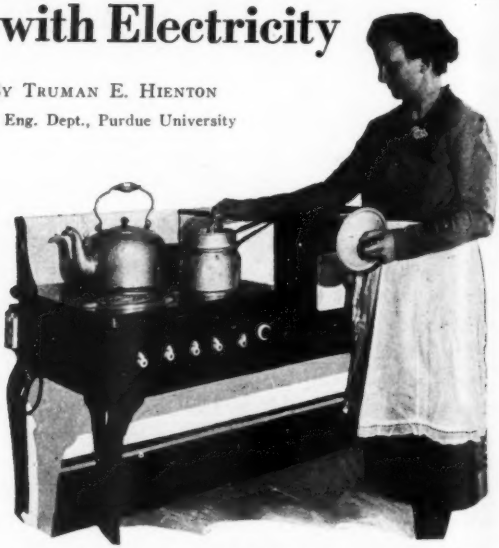
The great majority of farmers who have them in use say "Yes." Many farm women say they would sacrifice most of their other electrical appliances, if necessary, in order to keep the range.

The electric range is a time saver. With automatic electric control, a meal can be placed in the range and the housewife can engage in other activities with full confidence that the electric current will be cut off automatically when the meal is properly cooked. In addition, the range saves time in other manners such as eliminating the necessity for getting coal and wood, removing ashes, and other work incidental to keeping a stove clean and in serviceable condition. Better cooking can be done with the electric range; and the maximum food value from food so prepared may be thus secured.

One farm housewife found that upon installing an electric range she was able to do away with her hired girl. Getting meals became such a simple matter that she had plenty of time for outside chores, and could even go to town to do her shopping while the dinner was cooking. The absolutely safety of the electric range makes it ideal for use where there are small children around. As for the cost of cooking with electricity as compared to coal and wood, it is possibly higher if fuel cost alone is considered. But when the great reduction in labor and time is taken into account, the slight additional cost for operating the electric range is negligible. Where time saving is such an important factor to the housewife, as it is on the farm, the electric range is a necessity. The city housekeeper may manage her cooking with the gas stove for her tasks are comparatively few, but when the farm housewife has the poultry to look after, a large family to take care of, and even the vegetable garden to tend, the electric range is indispensable.

Farm Women Say
Cook with Electricity

BY TRUMAN E. HIENTON
Agr. Eng. Dept., Purdue University



Mrs. Byron Legg of Windfall, Indiana, and Her Electric Range with Which She Cooks for a Family of Six.

SIX cents per hour is the wage earned by farm women in kindling fires, carrying fuel, and emptying ashes from their coal cook stoves according to records secured by Miss Miriam Rapp of the Purdue University, Home Emonomics experiment station staff in her studies of fuels for cooking on the farm. This wage represents the slight saving in cost of cooking with coal over cooking with electric current and is allowed for the extra labor involved in caring for the coal ranges.

This item of saving in labor is only one of the many reasons given by housewives whose choice now is the electric range in preference to any other type. For, not only do electric ranges save labor, but also provide convenience, comfort, and cleanliness in cooking as well as accurate control of heat, reasonable cost, and a greater degree of safety than do other fuels. Many types of fuel are available for the farm homemaker today but it is very doubtful whether any other fuel so nearly meets the ideal requirements as does electric current. No other fuel is as easily controlled, no other as clean, no other as safe, and lastly there is probably no other which provides as great comfort.

Lack of familiarity with electric ranges is to a large degree responsible for the fact that they are not always used where farm electric lines make possible their installation. This fact was borne out recently in the state of Indiana where ten electric ranges were installed for one year in farm homes by the Purdue University Agricultural Experiment Station to aid

in securing records of the amount of fuel used and other costs of operation. At the end of the test period all of the ten ranges were purchased by farmers, in whose homes they had been installed, even though three different makes of ranges were used in the tests. The fact that all of these ranges were purchased indicates that as farm housewives become acquainted with the advantages of the electric range, they will avail themselves of the opportunity to install one when service from a rural electric line becomes available.

Electric Ranges Not Slow

One of the commonest objections to the electric range that may be heard is that it is "slow." Figures obtained by Miss Rapp in her study of the use of fuels for cooking show that the total time actually spent in cooking with both top units and oven is greater for coal and kerosene ranges and slightly less for gasoline pressure than for electric ranges. The summary of field studies indicates that it requires 20 hours, 56 minutes per week to cook on the coal range, 21 hours, 16 minutes for the kerosene, 18 hours, 39 minutes for the electric, and 16 hours, 37 minutes for the gasoline pressure range. These results were secured from studies made in 59 Indiana farm homes and certainly indicate that electric ranges are not slow when compared with other types of ranges now in use.

The comparison of time required in the care of the various types of ranges indicates that the electric range requires less time than any of the four types studied. The coal stove requires the greatest amount of labor for its care. Three hours and five minutes per week are required to kindle the fire, carry fuel, remove ashes, and clean the stove. The kerosene range required 1 hour, 16 minutes per week, the gasoline range 1 hour, 58 minutes and the electric range only 27 minutes per week. Here again, the reputed slowness of the electric range has been found upon investigation to be incorrect. The saving in time made by the electric over the coal range can be readily used by farm women in leisure or rest, or it may be used for carrying on some profitable venture, such as poultry raising.

Another important time-saving feature of the electric range is that it enables a farm woman to prepare an entire meal for cooking, place it in the oven and then have the afternoon free for attending a meeting of her home economics club or other community enterprise. One Indiana farm woman who used an electric range with time and temperature-control equipment stated that these features made it possible for her to assist her husband in the operation of a combine-harvester and at the close of the day's harvest to have a warm meal well cooked and waiting at the proper time. The time-honored hired girl who received five dollars per week and board for her assistance in doing farm housework is no longer to be found. In fact, few farm women are now able to secure the services of girls for this type of work and it is very necessary to use many kinds of time and labor-saving equipment in addition to the electric range.

Electric Control Appreciated

To many farm women, the accurate control of the heating units in the oven of the electric range by the temperature control device is the most outstanding feature of it. The marvelous simplicity with which this device is operated by the housewife relieves her of much concern which she experienced in attempting to secure the proper temperatures for baking with other types of fuel. The turn of a dial sets the temperature at which the oven will be maintained, a very simple process when compared to the sometimes almost frantic efforts required to secure proper temperatures on ranges of other types.

Scientific investigations are establishing the amount of time necessary and temperatures at which various foods should be cooked. With this information

available, the farm housewife using an electric range equipped with temperature control will find her baking problems decidedly easier. The time control device also adds to the ease with which the oven may be operated and allows the farm housekeeper to go about other work at the same time the food is being cooked.

Cleanliness Unequalled

One of the very important features of the value of using an electric range on the farm is the resulting cleanliness. This advantage of cleanliness pertains not only to the stove itself but particularly to the cooking utensils and also to the walls and ceiling of the kitchen. There are no fumes from the electric range to permeate the farm home, nor any smoke to blacken pans and kettles nor besmudge the curtains or walls. Of the time spent in cleaning the various types of stoves studied by Miss Rapp the electric required the least amount. The coal stove required 57 minutes each week, the kerosene 61 minutes, the gasoline pressure 43 minutes, and the electric required but 27 minutes.

Added to the advantages of the saving of labor and time, convenience, reasonable cost of operation, and accurate control of heat, is the matter of comfort afforded by the use of the electric range. This item of comfort is particularly important during the hot summer months. In a survey conducted of fuels used in 1403 Indiana farm homes, Miss Rapp learned that while over 50 percent used coal or wood only for cooking during the winter, that only 8.8 percent used either one exclusively during the summer. This would seem to indicate that farm women are relying on other fuels for their summer cooking for greater comfort.

Mrs. Rolla Zirkle, Swayzee, Indiana, with Her Automatic Electric Range That Helps to Make the Work Easier in Her Farm Kitchen.

The results of this survey showed that in several cases electric hot-plates are being used in farm homes for cooking during the summer to enable the housewife to work under comfortable conditions. Some are using a separate electric range in summer and a coal or wood range in winter. This is especially true in the homes in which there is no furnace heat in the kitchen and the kitchen range is depended upon as the source of heat. In several cases where recent installations had been made, combination coal or wood and electric ranges were in use. This type, where used, seemed to be very satisfactory, for the coal end was used when additional heat was necessary in the kitchen and occasionally when large amounts of water were to be heated.

Recent figures compiled by the National Board of Fire Underwriters indicate that fires annually destroy $150,000,000 invested in American farm property. An average property loss of $2,500 for each fire occurs every 13 minutes of the 24-hour day. The staggering number of 3,500 farm men, women, and children are killed each year by these fires. This enormous loss of life and property may be traced in many cases to explosions taking place during the kindling of a fire in the kitchen range, explosion of gasoline or kerosene fuel tanks on ranges, or from overheated stoves. Here again the electric range proves to be a real economy in the farm home—economical from the standpoint of saving human life and of property as well.

Godfrey and Herman Durst Find Threshing with This Outfit a Very Simple Operation.

The Dursts Do It Differently

BY E. R. MEACHAM

UP in the hills of southwestern Wisconsin there are three brothers in neighboring valleys who have threshed their grain with their own threshing machine for the last decade. Last summer an electric power line came up from Willow Creek to John Durst's farm and branched off over the ridge into the lovely hollow in the hills where Herman and Godfrey live.

They immediately decided that they wanted to try running their thresher with a 5 h.p. electric motor.

The machine does not have a self feeder nor a wind stacker, but it has a 20-inch cylinder and a 32-inch separator. It seemed to the rural service man of the local power company an imposing load for a 5 h.p. motor.

A good many threshing machines have been run by electric motors in the last dozen years, but the motors have ranged for 13 to 40 h.p. on these machines, and the job has not yet become a common farm practice. Throughout most of the country there are few rural installations designed to carry motors larger than 10 horsepower. Much of the electric threshing has been done on experimental projects or along lines where special conditions prevailed.

The Durst Brothers were anxious to find out what a motor would do on their thresher by trying it for themselves. They had been running the machine with an 8 h.p. gasoline engine and they were privately convinced that a 5 h.p. motor was quite equal to the job.

The power company man made his doubts quite clear but he was just as eager as they to find out the facts so he promised them a motor and made plans for a trial.

Last year was a very rainy season for threshing from the shock, so Mr. Durst planned to have a load of bundles under cover in readiness. But the boys took him by surprise when they went out with the motor one morning after a heavy rain, and there was no dry grain available.

"Oh well, let's run through a load from the field," said Mr. Durst. "Of course it is too wet to thresh, but I know that machine, and I can tell by the way it acts whether the 5 h.p. motor is big enough for it."

So the brothers and the sons and

the nearest neighbors all gathered round while a load of wet wheat went through. At the end of the run Mr. Durst said,

"That's what I've been looking for. She's all right. You can just leave her right here. Next year I'll put a wind stacker on that machine and have a real outfit."

"Say, wait a minute," warned the service man. "Those stackers take a lot of power. If you're going to add that blower, you surely ought to have a bigger motor, 7½ h.p. at least."

That sounded reasonable to Mr. Durst, and he promptly borrowed a fountain pen and signed the order for a 7½ h.p. portable motor right then and there.

That was Monday. On Friday it was in use and did the season's threshing at both farms.

Two or three men hauled the grain from the field, helping load each other's wagons and all coming in together. At the machine they needed a few extra hands to cut bands, stack the straw, and tend the bagger. While the teams went back to the field for more bundles, the men who were left carried away the grain and busied themselves with other chores.

"We can do it this way because we don't have to lose any time cranking an engine or firing a boiler," said Mr. Durst. "All we have to do is press the button. And we could easily keep five teams going with that motor."

Mr. Godfrey Durst took the meter reading before they began threshing at his farm and after they finished there. On account of so much wet weather that delayed the work their threshing period was unusually long last year and during that time they also used the current for lights, and other household uses. But the total energy reported was only 35 kilowatt hours. With this much current they had threshed 250 sacks of grain; 90 of which were wheat and 140 oats.

"It's cheaper than any other power I've ever used," said John. "The steadiness and quietness make the job lots easier. For there is nothing to go wrong or fuss with or worry about so it doesn't wreck your nerves."

Due to the unvarying speed of an electric motor, carefully conducted tests of electric threshing have shown some very remarkable advantages. For example, the University of Minnesota reports

(*Continued on page* 40)

When John Durst Presses the Button This Machine Begins to Hum.

"The Silo Filling Job Needs Attention"

INDEXED

By FRANKLIN J ZINK,
Agricultural Engineer,
Iowa Engineering Experiment Station.

A VERY surprising thing to observe is the time required for the adoption of new agricultural methods and machines. The period from early development to acceptance for general use will often cover a great many years.

A case in point is the silo. We still hear occasionally questions as to whether silage will harm cows, although silage has not changed since 1880, nor is there any indication that the cow has developed a resistance to what were once thought harmful effects of the silage. In 1882 there were just 99 silos in the United States, according to U. S. Government report.

One of these 99 users of 1882 was Mr. John Ham, of Millbrook, New York, whose power supply for filling the silo was described in the pages of this magazine in the August, 1928, issue. Mr. Ham first used a horse power for cutting and elevating silage. He now uses an electric motor, having purchased one of 5 H.P. for this purpose last season.

Now! Who have been the losers by not accepting this silage method of feed processing, losing the advantages of a lower cost feed and a consequent greater yearly return?

This new kind of farm power electricity, for cutting silage is now proven to be satisfactory. It is practicable to use even as small as a 3 H. P. motor with a proper speed of the cutter. However, since a 3 H. P. motor will not keep a man busy feeding, but the 5 H. P. motor will, it is the concensus of opinion that the 5 H. P. motor is better. These units are proving more satisfactory with the better constructed and designed cutters.

To lower the production cost of silage per ton in the silo is the

One-Man Feeding Makes for Efficiency in Reducing Total Man-Hours Per Ton of Cut Silage.

primary object in using the smaller power unit. Who will again be the losers if economical power is not adopted? We will predict that it will not require 30 years to adopt this economical power as it did to adopt this economical feed—silage. One demonstration is sufficient to convince anyone.

It may sound unreasonable even to try to drive the average sized silo filler with a 5 H. P. motor when nearly all cutter operators have at some time or other found that 20 and 30 H. P. tractors were overloaded. But this is largely because of the high speeds used.

Does not the airplane propeller, a kind of fan, give a capacity load to the plane motor? Essentially the same thing happens with the ensilage cutter blower and with a high speed it may load the tractor to capacity and do absolutely no useful work. It is true that the cutter blades require some power, but it is only a small amount of power in proportion to that required by the fan blades in elevating the silage. To do useful work it is necessary to lower the speed of the machine, thereby permitting the tractor to have reserve power for cutting the silage.

Electric Motor Most Convenient

By continued reduction of speed the power requirement may be brought well within the range of the 5 H. P. motor. The electric motor is doubtless the most convenient of the small farm power devices and may be operated at a very low power cost. Other small sized power units also may be used if the speed is sufficiently reduced.

In general, the lighter running cutters will give higher capacity per horsepower hour. No doubt some of the older machines now found on many farms are in such condition that they cannot be used with a 5 H. P. electric motor. The conditions necessary for satisfactory operation with 5 H. P. are as follows:

1. The transformer supplying the service and the wires carrying the current must be large enough. The local power company men can advise as to these capacity requirements.

2. A light running machine with 14 to 16-inch throat should be selected, although 19-inch throat cutters have been operated successfully.

3. Use a fan speed of 350 to 450 R.P.M. To do this a 19 to 27-inch cutter pulley is necessary.

4. Fan blades should fit the housing closely with not more than ⅛-inch clearance at the ends.

5. Keep the knives sharp. Change after every 4 to 5 hours' running.

6. The knives should run close to the shear plate. Have a sharp shear plate.

7. Feed the machine evenly.

8. Use a good belt for driving the cutter.

9. Be sure that the elevator pipe is absolutely vertical. Even a slight inclination away from the vertical tends to cause choking. If possible run the delivery pipe a sufficient height above the silo, use an open type short radius hood and ordinary loose sections of distributor pipe to the center of the silo allowing the silage to settle by gravity.

10. Select a cutter when a new one is purchased, which permits the silage to rise along the center line of the delivery pipe. This means that the delivery pipe can not leave the fan drum on an exact tangent to the drum circumference, but must flare out. If the delivery pipe is on a tangent the silage tends to slide along the side of the delivery pipe instead of going up the center of pipe. This sliding along the side increases the power required.

Other Considerations

Some other considerations desirable to know are:

1. Cutter speeds even as low as 280 r.p.m. on a 19-inch cutter operated by a 5-H.P. motor were still able to raise the silage into a 36-foot silo.

2. Three knives will give just as good operation as will six knives.

3. It is not practical to use more than a 5-H.P. motor when but one man unloads. One man can not keep up with the 7½-H.P. motor for efficient operation. The 10-H.P. motor will keep two men busy.

4. Silos may be filled with a crew even as small as two men. By this method cutting and hauling may be done more continuously. A better quality of silage results because it has no chance to become dry. Time is saved when small crews are used because of more efficient working conditions and no lost time in

traveling to the neighbor's farm. In Michigan two men filled a 10 x 37 foot silo in 18 hours' time, 7½ hours running time of the cutter. Approximately 65 tons were cut.

5. The motor may be mounted on the cutter, making a compact machine, convenient to set. At least one manufacturer has designed a motor platform for this kind of mounting.

6. Silage need not be tamped. Settling under its own weight has been demonstrated as being a good practice. A great saving of labor results from not tamping and just as good silage is obtained. This practice has been followed now for several seasons in many of the ensilage cutting sections.

energy for ensilage cutting on 4 different silos ranged from $0.54 to $1.98 for cutting from 30 to 65 tons of ensilage, the power rate being 3 cents per kw.-hr. The total cost for placing the ensilage in the silos was $0.65, $0.66, $0.81 and $0.99 per ton. This included man labor at $0.40 per hour, team labor at $0.30 per hour, power cost and a fair cost for interest and depreciation.

An extreme advantage of the electric motor drive is the convenience. With the "push-button" starting and stopping device the machine may be easily controlled.

In general ensilage cutting with the electric motor is a desirable application of electricity and will ordinarily result in economy. "A penny saved is a penny earned."

RESULTS OBTAINED

Five H.P. Electric Motor Drive Ensilage Cutters

Test	Silo Height Feet	Cutter Size Inches	Speed R.P.M. Under load	Tons Per Hour	Kw.-hr. Per Ton
Minn. Univ.	36	19	375	7.3	.84
Minn. Univ.	30	16		8.0	.67
N. Y. Coll. of Agr.....	30	13		8.0	.66
Wis. Coll. of Agr.....	35	15	375	6.6	1.4
Kansas St. Agr. Coll...	50	13	495	4.0	1.5
Michigan St. Coll.	40	11	525	5 to 6	1.0

Low Electric Power Cost

In Michigan as reported by the Michigan Agricultural College in Quarterly Bulletin, Vol. 10, No. 2, 1927, the total cost of electric

Five H. P. Motor-Driven Cutter. Note Large Cutter Pulley.

We Let Motors Do the Heavy Work

By R. E. BROWN
Moscow Mills, Mo.

Grinding Dairy Feed

Mr. Brown can grind 12 bushels of ear corn an hour or 30 bushels of shelled corn an hour at a cost of 3 kilowatt hours. He uses a 3 H.P. motor.

WE have 240 acres in Lincoln county where we raise corn, oats, legumes and the other crops necessary for a rotation and a fair market. Along with our grain farming, we milk 12 head of cows and have a few chickens. We find that, although we depend mostly on our crops, our cows and chickens give us a quick turnover for a small amount of cash and keep us at profitable work when otherwise we might be idle at certain seasons.

We have five uses at present for electricity; we grind feed for the cows and chickens, using a 3 h. p. electric motor; we drive our milking machine with a 3 h. p. motor, we have lights in both the barn and the house, and my wife has an electric iron and washing machine. We are interested in an electric range and refrigerator (for summer use) and pressure water system at the house. Outside, we are planning to fill the silo, using a 5 h. p. motor and to saw wood with our present feed grinding motor.

It might seem that we are using electricity on a small scale and indeed we are, at present, but there is a reason for every piece of equipment we have. Grinding feed, like every other farming operation, can be overdone. What I mean by that is that the largest and most expensive outlay is not always the most efficient in the long run. I decided when buying my grinding equipment that I only cared to grind ear corn, oats and soybeans. Accordingly, I bought an 8-inch feed mill with large enough pulley wheel to drive it with a 3 h. p. motor. The mill cost $35 and the motor $123; the belt I already had from a gas engine drive. With this outfit, I grind at the rate of 12 bushels of ear corn an hour at a cost of 3 kilowatt hours of electricity. Thirty minutes grinding usually lasts out 12 cows five days. I have been asked if I thought this equipment was large enough for a dairyman milking 40 cows. I believe that one man could grind fifteen or twenty minutes a day with my outfit and have enough for a 40-cow herd.

I have always been anxious

about a hammer-type mill, but have been informed that the smaller sizes do not handle ear corn satisfactorily. We always have ear corn to grind and prefer to stay in the smaller sizes of mills. Grinding hay and fodder has never appealed to me as being a paying practice, especially when the larger machines are needed to do the job.

It Milks Our Cows

Another job where we use electricity is in milking our cows. I have found through past experience that farm help seriously objects to milking cows after the day's work is done in the field; too, my boys object to doing the job all by hand. Even I don't care to spend an hour or two every day milking cows when machines are built to do the job cheaper and just as good as I can do it. Before we got our milking machine, it would take one man a good two hours to milk our herd by hand because some of them gave as high as 34 pounds to the milking. Today one man can take the machine and milk the herd in half the time with less actual work. My thirteen-year-old boy runs the two single units of our machine while I strip the cows after him. We usually do the job in fifty minutes without hurrying. While I was in the hospital recently, he did most of the milking by himself. We find that on the average it takes 1.1 kilowatt hours of electricity a day to do the two milkings. Although the original cost of our milking machine was $350, we are satisfied with the investment.

One of the biggest advantages I can see to our electric service is that it makes the work more interesting for the boys; and although it does work that we might do if we did not have it, why should we always have to do things the way our fathers did them and become more and more dissatisfied?

We Plan to Have a Motor Drive Our Ensilage Cutter

This fall we were wanting to use an electric motor to pull our ensilage cutter. In the past we have been accustomed to using tractors or steam engines and a large crew to fill our silo. According to reports from college experiment stations, we can use a 5 h. p. motor instead of our tractors by slowing down the speed of our cutters and feeding at a uniform rate. Silo filling is usually the biggest power job the farmer has. If he can handle it with a 5 h. p. motor and his power company will arrange a satisfactory

Milking Cows by Machine

Mr. Brown's 13-year-old boy runs this milking machine. For 10 cows the energy consumption per month is 30 kilowatt hours.

Washing the Electric Machine Way

Mrs. Brown can do her family laundry for eight in 2½ hours at a cost of ¾ kilowatt hour of electricity.

minimum or method of charging for that motor on the line, then it could be used for many other things most of the year.

I have told you about the use of electricity outside our home. If we consider our time worth anything, and we do, the use has been very profitable. In our home, electricity again saves time and drudgery at an expense we feel we can afford. The washing machine runs about two and a half hours each week using less than one kilowatt hour per washing. The iron runs about the same time for each washing and uses about one and one-half kilowatt hours for the ironing.

I have told you in brief what electricity means to me on the farm and how I am profitably using it. As time goes on, we expect to add more equipment to use the service, but additions are slow because we like to know just what it will cost before we buy and just what benefit we will derive from it. For this reason we are especially interested in the information we get from the college about the electro-test farms in the state. We feel that that information is reliable because it is taken from practical farming conditions like our own.

Real Salesmanship

A large concern selling electrical appliances to jobbers and retailers advertised in one of the leading dailies recently for a salesman and received a large number of replies. Most of them came from young men who suggested that as they had graduated from Stevens Institute and the Massachusetts Institute of Technology, they were willing to start as salesmen with the view to gaining promotion because of their knowledge. One answer stood out prominently. It said:

"I am a real salesman and can prove it. I recently sold fifteen electric vacuum cleaners in a town which is not supplied with electricity and has little chance of being supplied in less than two years. That's real salesmanship, in my opinion. How about that position?"
—*Wall St. Journal.*

Easy

"Say, do you know an easy way to find the horsepower of a car?"

"No. How?"

"Just lift up the hood and count the plugs."

Twin Babies in the Farm Home of Mr. and Mrs. Irwin Rasmus, Garner, Iowa.

The Baby in the Electric Home

BY MARY L. ZINK

WHAT better use could be made of electricity than the service of his majesty, the baby? From the time mother begins the making of tiny garments on her electric sewing machine, which she can use even at this trying time without becoming weary, to the time the baby himself can point chubby fingers at the rosy glow of the table lamp and say "pretty," electricity is his constant servitor.

No longer must the baby's mother creep out into a cold kitchen in the murky dawn to heat that ever necessary six-o'clock bottle of milk. For now we have a convenient and practical electric bottle warmer, especially designed to bring the milk to exactly correct temperature. It is small, compact, and inexpensive and may be procured in dainty colors to harmonize with the color scheme of the baby's room.

In that all-important ceremony of the bath, electricity again takes part. The cozy warmth of a reflector heater eliminates all fear of chilling the baby and exposing him to drafts. The water for the bath comes from a motor driven water-system and is heated by an electric water heater. Perhaps, in winter months when real sunshine is not accessible to the baby, this water bath is followed by a bath in the rays of an electric "sun," which provides the utlra-violet light necessary to baby's growth. These ultra-violet lamps are now available for home use and are a practical investment for the prevention and cure of rickets and the promotion of proper bone and tooth formation.

Baby's clothes are washed in an

electric washing machine. Several manufacturers have recently put on the market small size washers, using only about four gallons of water. These "baby" washing machines are useful for the washing of the baby's dainty clothing as well as the heavier garments. They are light, easily handled, and very inexpensive.

Where drying clothes is a problem, nothing could be more practical than the electric clothes-drying cabinet for the daily diaper work and the other small garments which must be washed and dried often.

Electricity also provides current for an automatic iron, which can be adjusted to low temperatures for thin dainty dresses and bonnets or high temperatures for heavy wraps and blankets. The baby's mother who is fortunate in the possession of an ironing machine can make short work of the daily ironing.

What is more necessary for baby's health and comfort than pure milk? Under ordinary conditions of refrigeration milk is many times in danger of contamination, but with electric refrigeration the day's formula may be made up, poured into sterile bottles, put into the refrigerator and be absolutely safe from bacterial growth, since a regular temperature of less than 50° is steadily maintained.

Baby's home is kept spotlessly clean with an electric vacuum cleaner. The glare of lights in his eyes is prevented by indirect or wall fixtures. Light is available at the touch of a finger when mother goes to investigate that midnight cry. What greater servant has the baby than our good friend, electricity?

Excavating Basement With Electric Motor

Two farmers on the Illinois Experiment Electric line have excavated their basements using the 5 horse power portable chore motor and drag elevators. The elevators are the common type used for elevating corn into the crib. The elevator was set in position extending through the window and driven through a speed jack. The dirt was shoveled directly into the drag elevator and delivered to a wagon above. This was found to be a very convenient and economical way to remove the dirt from the basement.—E. W. LEHMAN.

Here's the Chore Motor Operating the Drag Elevator.

The New Hired Help

In the Dairy

By HOBART BERESFORD*

ON the O. K. Dairy Farm located west of Ontario, Oregon, Mr. Fred H. Richter uses the "New Hired Help" for operating his retail milk route and dairy herd.

The Richter ranch consists of sixty acres of irrigated land on which much of the feed for the dairy herd of twenty-five Guernsey cows is produced each year. The herd produces approximately ninety gallons of milk per day which is retailed to two hundred and fifty resident and commercial customers in and around Ontario. Milking is done by the machine method, the two operators running the two double units for about an hour and a half to the milking and devote the rest of their time to running the ranch. The use of modern electrically operated equipment makes this arrangement possible and permits the man who manages this herd to take care of the milk bottling, make the delivery, wash and sterilize the equipment, as well as do the other chores which are incidental to any dairy farm.

The simple yet practical milk barn is equipped with cement floor and overhead track litter carrier. Mr. Richter says that although the carrier and track cost in the neighborhood of $160.00, it has proven to be a good investment by saving time and labor required for cleaning the barn. Water from the automatic pressure is piped into the barn and lessens the work of keeping the floor and the white-washed walls clean. Having the water supply in the barn means warmer water for the cows in winter and less work and trouble during the cold weather.

The milking machine equipment is also located in the barn and consists of a pipe line machine operating two double units. Switches for operating the pump, which is located on a shelf near the west entrance, are located along both rows of stalls so that the last man through may shut the motor off without wasting time or steps.

The milk from the machine pails is carried in cans to the strainer can on a covered platform elevated above the cooler and located outside of the milk house. From the strainer can the milk flows over an electrically operated cooler and is bottled and sealed immediately, after which the cans of bottled milk are stored in the cold box which is

A little motor operates a two-brush bottle washer and helps make short work of the dirty bottles and milking machine equipment.

*Head, Department of Agricultural Engineering, University of Idaho, Moscow, Idaho.

cooled by the same electrically operated machine that cools the brine used for the surface milk cooler. A section of the cold box is provided for household use and keeps the food for the family. A little gear pump located on top of the brine tank circulates the cold brine through the cooler's tubes during the cooling period and is driven by a small electric motor.

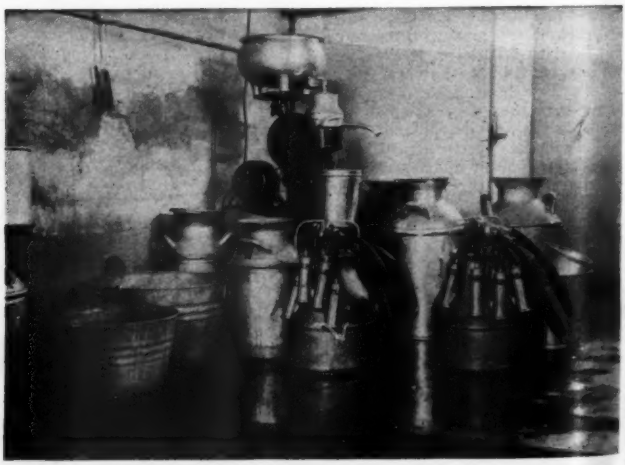
The automatic electric water system supplies water under pressure at the milk barn, milk house and residence. The system operates as the use of the water on the ranch demands.

The first few gallons of milk passing over the cooler actually freeze to the cooling tubes and all of the milk is cooled well below fifty degrees F which insures milk of good quality.

From the cold storage box the bottled milk is hauled by truck and delivered to the residential customers before breakfast. Commercial delivery, which includes restaurants and bakeries, is made after eight o'clock. The man taking care of the milking, bottling and the delivery also washes and sterilizes all of the equipment and usually finishes the day's work by eleven o'clock each morning.

The cream separator used for securing special whipping cream is driven by an electric motor. The labor of cleaning the two hundred and fifty to three hundred bottles each day is greatly reduced by the electrically driven bottle washer. One of the essentials to the farm dairy's operation is a supply of fresh water. Mr. Richter has found the electric motor ideal for operating the deep well automatic pressure water system. Water is piped under pressure to the barn, milk

(*Continued on page* 40)



Steady Power on the Cream Separator Produces Whipping Cream That Satisfies the Customer.

Showing Frost Electric Screen Doors on Dairy Barn at the New York State Agricultural Experiment Station, Geneva, N. Y.

For Fly Time

THE experimental work in rural uses for electricity that is being carried on through the co-operation of the New York State Agricultural Experiment Station and the Empire State Gas and Electric Association includes many interesting investigations.

One of them is fly traps.

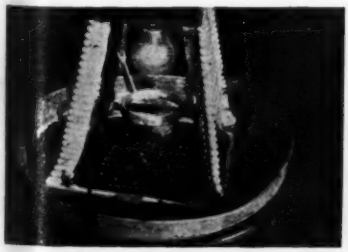
The control of stable flies proved a particularly practical project. Special screens with wires carrying a high tension static charge of electricity were installed at the main doorways where the cattle enter and leave the barn. These screens, requiring very little electric current for operation are very effective in electrocuting flies which attempt to pass through. Although a startling shock, is experienced when touching a finger to the wires, the charge is not dangerous. The effect is similar to that experienced when one touches the spark plug of an automobile engine when it is running.

In this barn the control over flies has been so effective that spraying of the cows was unnecessary.—MAURICE W. NIXON.

Enjoy Two Water Supplies

Last spring we had an electric water system installed in our home and now we are enjoying the privilege of both the well water for drinking purposes and cistern or soft water for the many uses about the home. The use of running water in the home cannot be overestimated by the family, who well knows the use of the same.

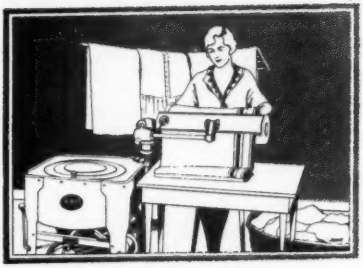
Mrs. B. Cudworth,
Armada, Mich.



Left: Insectocutor and Flies; Right: Flies Caught in Electric Screen Door in One Day.

Electrical Housekeeping

Conducted by GAIL MEREDITH



This Ironer Is Run by the Same Motor That Runs the Washing Machine.

For Ironing Day

THERE is a tremendous satisfaction in living in the age when machinery has begun to catch up with the home. Since somebody first got underway with an electric motor to sweep and beat our rugs, one job after another has been turned over to machines that do it easier and quicker and cheaper than human hands can manage.

The small ironing machines that heat themselves with electricity have cut ironing day in half. They are really a very simple device, just a long curved shoe, and a padded roll mounted together on a heavy standard of one sort or another. The shoe is the iron; the roll is the ironing board that is turned by a little motor to carry the linen and the clothing over the iron.

The shoes vary in length and width, but even the smallest of them covers the acres of surface in summer ironings far more quickly and easily than a hand iron could.

One of those men who is always figuring out how many broom handles it would take to reach from here to there has come forth recently with the pronouncement that a woman pushes an electric iron twelve miles in doing an average ironing.

Dear! Dear! Thinks I. If I could only walk that far and realize it as little, I'd take off that extra ten pounds as easy as scat.

You can sit down to work at these machines, and besides saving all the walking and standing, the lifting and pushing that used to go into getting an ironing done you save an appreciable amount of time, too, from one third to one half, reports have it. And time is something to be jealously guarded these days.

Though the operation of these ironers is very simple, getting the knack of them has to come with use. You can do the flat work right from the start, for practically all you have to do is guide the piece through the machine. But it takes patience to practice doing the shirts, children's dresses and house dresses, for just at first it seems to be more work to do them this way than to do them by hand. Once you get the trick of them, however, they are easily and quickly done on the machine. How long that will take, and how well you will finally do the job, depends, like everything else, on individual skill.

Katherine Fisher of the *Good Housekeeping* Institute considers these new ironers so important that she says in a bulletin on laundry methods, "but even though the machines were to be used for nothing other than flat work, the institute feels that the ironing machine more than pays for itself in the comfort it brings to all the family."

Taking care of the machine is not much of a chore for the housewife. The motor needs an oc-

sional oiling; various types will need greasing now and again,—but in the main, the only attention they demand is keeping the surface of the shoe clean and renewing the pad on the roll when it gets flattened down and dirty.

* * *

Frozen Salads

"There are nine and twenty ways of composing tribal lays,
And every single one of them is right."—RUDYARD KIPLING.

IT is just the same way with salads, Mr. Kipling. No matter how many ways there are of putting them together,—nine and twenty or half a dozen, we women affect a fine disregard for exact figures in a case like this. Every single one of them is right in the eyes of our families in the summer time.

That is particularly true of the frozen salads that have followed the electric refrigerators into so many homes.

These frozen salads are delicious just by themselves, scooped up in squares on a lettuce leaf, topped with mayonnaise or boiled dressing and whipped cream, or served with something else. You can stretch them twice as far if you serve a spoonful on half a peach, at the stem end of a pear cut into slender sections and spread fan wise over the plate, or in a tomato.

This cream cheese salad I have made with stewed apricots instead of pineapple and found equally good.

1 package cream cheese
½ cup drained, crushed pineapple
½ cup pineapple juice
¼ cup cold water
1 tbsp. gelatine
1 tbsp. sugar
½ cup cream whipped

Soak gelatine in water five minutes. Dissolve in heated pineapple juice. Mix with cream cheese which has been softened with a fork. Fold in sweetened whipped cream and pineapple. Pour into tray of electric refrigerator and chill for two hours.

A neighbor of mine who never believes in letting well enough alone with recipes, added one half cup of salad dressing and a handful of marshmallows cut fine to this mixture before she put it in her refrigerator when she was having a party one day.

She served it as a separate course with salad dressing and a bright red cherry on the top of each helping. We ate it with hot buttered crackers.

You Can Freeze or Chill Your Salads in an Electric Refrigerator.

* * *

Reading the Meter

LEARNING to read the meter that tells you how much electric current you have used each month is a very simple job. Electric energy comes by the watt. This is the measure of the amount of electricity any appliance uses, but this amount is so very small that it is counted by the thousands. The unit you pay for is 1000 watts used for one hour; it is called a kilowatt hour. For instance, a 40-watt lamp burning for 25 hours.

uses 1000 watt hours or 1 kilowatt hour of energy.

The electric meter is a kind of clock that only runs while current is being used, and the smaller the flow of current, the slower it runs. The four dials are the faces of the clock. The dial at the right shows the units, the next the tens, the third the hundreds, and the fourth at the left shows the thousands column. The hands on these dials record the number of kilowatt hours that have flowed through it from the time it was set at zero. When the hand is between two numbers, always read the smaller one.

Reading the Meter a Simple Process

To read the meter, simply take the figure that the hand has already passed on each dial. These figures written down in the same order in which they appear on the dials give the correct meter reading. For example, on the meter shown here the hands have passed the 9, the 7, the 4, and the 2. Reading from left to right we have

9 7 4 2

This shows you that 9742 kilowatt hours of current have passed through the meter. To learn the amount used in a month, you must subtract the reading at the beginning of the month from the reading at the end. The difference will be the kilowatt hours used during the month.

Be sure to notice that the hands turn in opposite directions like gears. They are actually geared together, so that each hand turns ten times as fast as its next neighbor on the left.

When a hand is between two figures, always read the smaller one.

Better Prices for Milk Comes With Electricity

By J. C. Scott

ALTHOUGH 18c a quart is far above the general retail price of milk, that is the price Dodds Bros., owners of the Marymoore Farm, are getting for all the milk they can produce and deliver in Seattle.

This price is based on quality.

And that quality is possible only where milk utensils are thoroughly washed with hot water and properly sterilized.

"We have used nearly every type of dairy sterilizer known, I guess," remarked Mr. Ralph Dodds, recently, "but nothing has ever been so satisfactory from every standpoint as the new electric sterilizer.

"In the evening when the bottles come in they are immediately washed with hot water and a revolving brush driven by an electric motor. Then the bottles, cases and all, are put into the sterilizer and left until ready to be used again.

"After washing the utensils, including separator parts, in the morning, they are all stacked in the sterilizer, where they are left all day. By this method we have been able to keep our bacteria count always under 5,000 and frequently under 1,000.

"The sterilizer, which is a 12-case size, furnishes plenty of hot water for washing, and its cost of operation, on a flat water-heating rate, is only $6.00 per month, in comparison with $12 to $18 to operate our old sterilizers.

"The water is always hot when we need it—no building fires or worrying about fire hazard."

Immediate cooling of the milk and clean premises are other factors responsible for putting out a high-priced milk on the Marymoore Farm.

After each cow is milked, the warm milk is run over a tubular cooler, through which cold water is circulating. The barns are thoroughly flushed out every day with water. Both of these practices are possible only where there is running water under pressure, and the electric automatic water system makes this feasible and economical.

USING A SILAGE CUTTER AS A GRAIN CARRIER

By H. J. GALLAGHER

Engineering Experiment Station,
Michigan State College.

DURING the oat threshing season of 1928 an interesting experiment was conducted on the Michigan Experimental Line in conveying grain directly from the threshing machine to the storage bins with electric power. Field threshing of oats is generally followed in Michigan and the straw used for bedding. This means setting the threshing machine so the straw may be blown into the barn or stacked near the barn, and drawing the sheaf grain from the field to the machine. The threshed grain is then usually carried to storage by man power, a disagreeable task involving considerable hard work and extra help.

The outstanding value of electric power is to eliminate much of the hard work and extra help wherever possible, and at the same time to utilize for a number of different operations the equipment already on the farm. For these reasons, it was thought possible that the ensilage cutter might fit into the threshing operation by merely removing the knives and have the grain dumped directly from the weigher on the threshing machine into the drum of the ensilage cutter and then blow the grain to the storage bins through the same pipe that is used in filling silos. For the experiment the drum of an old discarded ensilage cutter was used with a hopper built on the side in place of the feed table. The size of the pulley on the drum was 10½". The motor used was a modern type 5 horse power portable, 220 volt, single phase, equipped with a 3½" pulley.

The storage bins on farm No. 1 were 40 feet from the thresher and on farm No. 2, 93 feet. The following results were carefully tabulated:

GRAIN CONVEYOR
Blower Type—5 H.P. Motor

	No. 1	No. 2
Number of bushels	1,705	792
Time hours	13	7
Total height elevated, feet	7	12
Distance conveyed, horizontal, feet	40	93
Kilowatt hours	47	27
Energy cost (3c KW H)	$1.41	$0.81
Crew reduced	4	6
Resultant saving	$21.20	$18.09

Fig. 1. Spout Carrying Grain Directly from Weigher on Threshing Machine at Right to Hopper on Drum of Ensilage Cutter.

The resultant saving was determined on the saving of the wages and board of the smaller crew required, minus the cost of energy used.

This same outfit was used on other farms with very satisfactory results.

In the case of Farm No. 1, a 90 degree elbow was used in the pipe 12' from the blower with apparently no effect on the delivery, or clipping the oats.

On three attempts the capacity of the threshing machine was reached in an effort to plug the pipe but without success.

Other uses for the ensilage cutter that have proven practical are the cutting of corn fodder and alfalfa and sweet clover that has attained a rank growth before harvesting.

One beef cattle feeder reports the stacking of his corn in the bundle adjacent to the feeding lot and each day cutting the amount to be fed with the ensilage cutter and blowing the feed directly into the feeding racks.

Uses such as these give a new aspect to the investment in this kind of equipment that is generally considered applicable for only short seasonal jobs.

Fig. 2. Seven-inch pipe conveying grain from drum of ensilage cutter to bins in barn, distance 40 feet. Note 90 degree angle 12 feet from blower.

Hooking Up

By MRS. V. W. UTTS

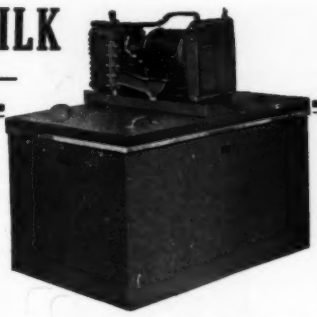
"Little Electric Motor" has come to
our farm to stay,
To milk the cows, an' grind feed and
make the chickens lay,
An' skim the cream, an' cool the
milk, an' churn,
An' make the heat, that bakes the
bread, an' helps the grindstone
turn;
And all us children, when this work
is done,
Sit near the radio an' has the
mostest fun,
A-listnin' to the music it gives us
while we sup,
But you won't have these comforts,
If you don't
hook
up!

Onc't they was a crabbed man and
wouldn't have the power—
But went a slaven' around the farm,
every wakeful hour,
His wife she heard him grumble, his
children heard him call,
And when at last his work was
done, no time was left at all.
He complained about his cows and
hens, in terrible distress, and said
he worked both day and night and
then some more I guess.
At last he got the power and with
it blessings filled his cup,
And maybe you are drudging too,
'Cause you don't
hook
up!

And then there was another man
ud allus laugh and grin,
An' go a visiten every while to see
a friend or kin,
An' once when there was company
and ole folks was there,
He showed them all his 'lectric
helps, with greatest pride and
care.
With power in his cow barn, chicken
house and shop,
An' in the house the washer's whirling like a top,
There every one was happly even
Jip, the pup.
But you'll be missing all of this,
Till you just—
hook
up!

And now I want to tell you, when
all looks blue,
An' the old lamps flicker, and the
wind blows down the flue,
When the chickens won't lay, and
the milk yield is low,
An' the old windmill turns around
so slow.
Then you better get the power and
a motor's just the thing
To give Pa his rest and Mother
heart to sing.
So just keep up your courage and
you'll have your share of luck.
And be blessed with real contentment
As sure as
you
hook
up!

COOL YOUR MILK
this Better Way—



Quick, efficient cooling of milk immediately after each milking means sweeter, fresher *delivered* milk and cream.

Act now to get the benefits of Haven Milk Cooling this season! Installation is quick and simple. Complete system (tank and machine) can be put into actual operation 2 hours after delivery.

Illustration shows complete Haven Farm Milk Cooling installation with all-steel insulated tank. Furnished either for belt drive from shafting or engine, or with direct-connected motor for electric power.

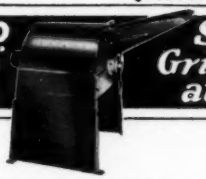
This Haven Refrigeration System is made especially for *farm milk cooling.* That is one reason why it excels in farm service. *Write today for complete information.*

HAVEN MANUFACTURING CO. - - Milwaukee, Wis.
Dealers: A few good sales territories still open.

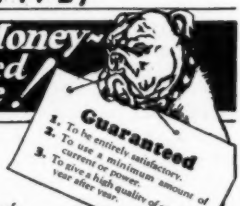
HAVEN REFRIGERATION SYSTEM for FARM MILK COOLING

The PRATER MILL
(HAMMER TYPE)

5 H.P. $75



Save Money~ Grind Feed at Home!


Guaranteed
1. To be entirely satisfactory.
2. To use a minimum amount of current or power.
3. To give a high quality of grinding year after year.

HERE is the farm hammer mill that has won the recommendation of thousands of farmers, experiment stations and power companies. A practical farm feed grinder so sturdily built that it gives years of highly satisfactory service. No complex gears or plates to break. Ready at all times for efficient operation when you want it right on your own farm.

You will marvel at the tremendous saving and high quality fresh feed it makes possible year after year. Here it is ready to come to your farm as the most efficient hired man you ever had.

Priced as follows:

2 Horsepower size.....$48.75 **3 Horsepower size.....$54.25**
5 Horsepower size.....$75.00
The power sizes are very conservatively stated.

Ask your power company for a demonstration.
Send to us for a new catalog.

PRATER PULVERIZER CO.
Dept. K, 817 West Washington Boulevard, Chicago

Equipped with gas engine for homes without electricity

Now

a Washing and Ironing Machine Combined

At a price formerly asked for a washing machine alone

WOMEN on the farms—you can now be rid of the drudgery of both washing and ironing, and pay no more than you have been asked for a good washing machine.

The Hurley Machine Company has just perfected this complete laundry unit—the first and only machine of its kind. It combines the Thor Agitator—world's most thorough and efficient speed-type washer—with the New Thor Rotary Iron, that does your ironing in one-fifth the time required by hand.

The Thor name on this new laundry unit is your assurance of lasting satisfaction. Write us for illustrated booklets describing this and other Thor home laundry equipment.

THE HURLEY MACHINE CO.
22nd Street and 54th Avenue
Dept. E-7 Chicago, Ill.

Rural Electrification in Texas

BY WELLINGTON BRINK

TEXAS, first in agriculture, seeks to be first in rural electrification. Notable pioneering is being done in this state, famous for being ever at the frontier of action and of thought, by those who are keenly interested in bringing convenient power and light to Texas farming communities. At the forefront of this pioneering work stands John W. Carpenter, president of Texas Power & Light Company and long recognized as one of the constructive State-builders of the Nation. Mr. Carpenter was reared on a farm in Navarro County, and today he owns and operates a Navarro County farm and a Dallas County ranch.

Mr. Carpenter is vigorously fathering a campaign for more cotton mills for Texas, and is likewise pushing a movement for the development of dairying in this great State. Diversification in industry and in agriculture, the employment of labor-saving methods in town and in country, the promotion of greater comfort and convenience in the home, finding ways to make a better living and finding ways to live better—this just about encompasses the program of this outstanding figure in Texas business circles. Mr. Carpenter's advocacy of rural electrification is in furtherance of this program. He believes that the time will come when electric light and power will be one of the delightful commonplaces in most country communities.

Mr. Carpenter does not stop with surveys, although he sees their necessity. He does not content himself with corporations, although he is instrumental in going after this problem of rural electrification on a cooperative basis. Already his company serves more than 7,000 rural customers along nearly 600 miles of strictly rural lines.

These rural lines serve not only the individual farmers along their routes, but carry current into

communities of but a few hundred souls, where electricity until recently was considered a luxury. These lines constitute a potentially important part of a transmission and distribution system totalling well up, toward 5,000 miles.

A general summary indicates that Texas Power & Light Company turns 314 churns; heats 5,281 irons in rural homes; serves 724 country ranges; cools 83 farmhouse refrigerators; turns 342 small motors used for pumping or milking or otherwise; operates 311 suction sweepers and 229 washing machines; percolates the coffee for 421 farm households; furnishes the power for motors for irrigation; makes easy the employment of 102 sewing machines by farm women, and so on.

Think of the backs that have been relieved of strain, of the steps that have been saved, of the sanitation that has been achieved, of the time that has been conserved, of the increased farm income that has accrued! Yet this is a mere beginning.

Dairying and poultry raising loom more important in Texas, and with their development will come an increased demand for electric current. Truck farming is done more and more extensively in this marvelous State where growing season dovetails with growing season. And irrigation of truck farms is accomplished most conveniently and economically by pumps driven by electric motors. Cotton is being ginned with increasing efficiency, due largely to the fact that gins are turning to electricity to do the job.

In Texas has been established what is known as the Rural Electrification Committee, for the study of this problem. In this committee are represented the agricultural colleges, the regional chambers of commerce, the several large farm associations, and the principal power and light companies. Surveys are being made, theories are being tested, experiments are being conducted, and from time to time reports will be published. Texas is not lagging behind in rural electrification.

Wash Day Slavery

is leaving the farm

With General Electric Motor

NEVER was a task so tiresome and back-breaking as the task of bending over a washboard for hours each week.

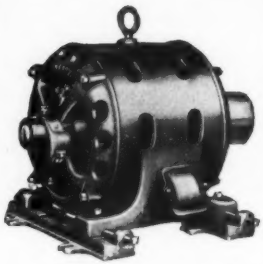
Farm women demanded relief from this drudgery — and electricity came to do the work in less than half the time — at a cost of about 5 cents an hour.

Now—the originator of the electric washing machine offers farm women the fastest, most modern washing machine on the market. It does *all* the work. It washes a tubful of clothes clean in 5 minutes. It has fewer moving parts than any washing machine on the market. No belts to slip and break—nothing to get out of order.

This is a Thor washer—of lifetime Thor quality. And it's the lowest-priced quality washing machine on the market.

For complete information on this new washer—and the complete line of Thor labor-saving laundry equipment—write to

THE HURLEY MACHINE CO.
22nd Street and 54th Avenue
Dept. E-7 Chicago, Ill.



5 Horse Power Century Type RS Repulsion Start Induction Single Phase Motor

Continuous Reliable Service

The continuous, reliable operation of Century Motors will add greater profits because motors do more work in less time. Century Motors "Keep a-Running"

CENTURY ELECTRIC CO.
1806 Pine St. St. Louis, Mo.

40 U. S. and Canadian stock points and more than 75 outside thereof.

Century MOTORS

Why Is There An Increase In My Electric Bill?

By R. E. PIERCE

This is the first question you ask yourself when you receive a bill which is higher than the previous month. When the bill for electric current seems unduly high, the meter is often the first thing suspected. In reality, it is usually the last thing to blame. Some of the causes for higher bills are as follows:

1. Cloudy or rainy weather, requiring use of light in daylight hours.
2. Additional lamps may have been installed, or small lamps may have been replaced by larger ones.
3. Old dim lamps may be in use, and in order to get sufficient illumination more of them must be lighted than would be necessary if lamps in good condition were used. A dim lamp takes practically as much current as a new one, and is a very wasteful thing to use. With lamps in good condition, the light will not be efficiently produced if the electric company allows the voltage to be low. In this connection it may be well to state that the tungsten lamp has been improved in quality and reduced in price to such an extent that no customer can afford to use carbon lamps even if he were paid a bonus on each lamp for so doing. Many householders cling to the use of carbon lamps because they are usually supplied free. The folly of this course may be realized from the following statement: The cost of a lamp is reckoned in cents, but the cost of the energy to operate it during its life is a matter of dollars. The energy cost for a tungsten lamp is only about one-third that of the carbon lamp.
4. Lamps are sometimes left burning for days in attics, closets and other out of the way places; haylofts are excellent places for lighted lamps. Be sure to turn them off when through working at that point.
5. Many devices which are operated through flexible cord from a lamp socket, especially heating devices such as irons, heaters, etc., take very much more

power than any lamp which would be used in the household. It is often erroneously believed that because such devices can be operated from a socket they require no more power than a lamp. The extent of this error may be realized from the statement that a 6-pound laundry iron takes as much power as 20 tungsten lamps of about 20 candlepower each.

6. Defective wiring may allow current to flow when no lights or other devices are in use.

7. Where electrically driven machinery is used and not properly oiled and cared for, excessive friction may result, with a corresponding waste of power and increase in the bill for electric current.

8. An error may be made by the company's meter reader, so that the bill rendered is too high or too low. If it is too high, the bill for the following month will be low by the same amount, if the meter is then read correctly, so that the consumer will not lose anything in the long run. (When a minimum monthly charge is made by the company the consumer may lose in the long run. Hence, if an error has apparently been made by the meter reader, the company should be requested to investigate the matter and to render a corrected bill if an error is found.)

Electricity Pays for Itself on This Farm

"We were just able to get the use of electricity last fall. It is sure a great help to me, as I have two large hen houses which I light. It more than paid for itself in that way through winter eggs last fall and winter. This spring we used our first electric brooders and incubators and were very much pleased with both. Also, I can't say enough in favor of the other helps such as washing machines, iron and the electric range.

I have a large family and I sure appreciate these electrical helps very much."

FLOYD H. MAXWELL,
Box 118, R. 1,
Chehalis, Wash.

THE MODERN FARM HOME HAS RUNNING WATER

And the selection of a pump or water system is of utmost importance, if you are to derive the greatest benefit and help from its installation. Experience has shown that it is poor economy to buy a pump too small for the maximum duties about the premises. Many modern country homes are now equipped with two automatic electric systems—one for soft water under pressure, for bath room and other general use about the home and tenant house—the other for spring or well water for barn, stock and houses.

Also a vital factor in satisfactory trouble-free service and low maintenance cost, is a pump mechanically suitable for the most exacting requirements. The Burks Super Turbine is such a pump. Expert engineers have told us it is mechanically perfect. Has only one moving part—no friction bearing surfaces to wear, cause grief, necessitate replacement and expense—in fact there is no metal to metal contact of moving parts and *therefore no wear.* This wonderful piece of essential farm equipment is durable, reliable and efficient to the extreme.

DECATUR PUMP COMPANY
Decatur, Illinois

BURKS SUPER-TURBINE PUMPS
Only one moving part
"A Life-Time of SERVICE"

Please send me descriptive literature on Burks Super Turbine Pumps.

Name .....

Address .....

THE MODERN WAY

Electrically Operated

De Laval

Separators and Milkers

Milking and separating the modern way with electrically operated De Laval Milkers and Separators adds immeasurably to the pleasure and profit of dairying. De Laval Milkers end the drudgery of hand milking, do a better job of milking, save time and labor and produce more and cleaner milk. De Laval Separators skim cleaner, last longer and operate economically.

The use of a De Laval Milker and Separator on any farm is a sure sign of efficient, economical and sanitary production—modern dairying.

THE DE LAVAL SEPARATOR CO.,
Dept. 6244,
New York, 165 Broadway;
Chicago, 600 Jackson Blvd.;
San Francisco, 61 Beale Street.

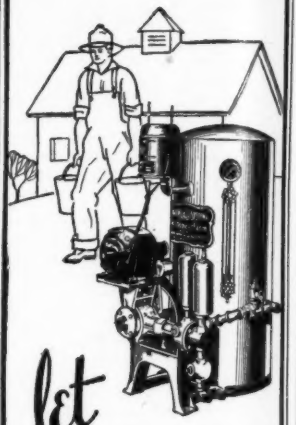
Please send me, without obligation, full information on:

☐ Electrically driven milker.
☐ Electrically driven separator.
(Check which.)

Name.....

Town.....

State..... R. F. D..... No. Cows....



let a PAUL Water System carry the Water!

PLENTY of water at a turn of the faucet... *fresh, clean, cool*! Water for kitchen, dairy, barn... for fire protection too. No more back-breaking pumping and carrying. *Increased profits* on live stock will pay for it every year.

The Paul will work for you for a few cents each day! And the first cost is *much lower than you expect.* Use the coupon now and let us recommend the system for your needs.

FORT WAYNE ENGINEERING & MFG. COMPANY
Fort Wayne, Ind.

Pumps and Water Systems — *Water Softeners Heaters*

Ft. Wayne Engineering & Mfg. Co.
***1722 N. Harrison*, Ft. Wayne, Ind.**
Send complete information and prices on Paul Water Systems.

Name_____

Address_____

Front Cover Title Contest

In addition to the $25 cash prize for the best title to this month's front cover, we will pay $5 for each of five titles given honorable mention. In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled. The winners will be announced in the September issue.

Here are the rules:

1. **Only farmers or members of the farm family, to whom this magazine was sent, are eligible.**
2. **Only one title may be submitted.**
3. **Use the form below or write your answers on a plain sheet of paper in similar form.**
4. **Be sure to answer question (a).**
5. **Write plainly and send your suggestion to the Title Editor, ELECTRICITY ON THE FARM, 225 West 34th St., New York, before August 1.**

The May Winner

"Heavy Profits from a Light Investment."
Wesley Jones, R.R. 3, Little Rock, Ark.

And the following titles have been selected as the winners of the five $5 cash prizes:

"Heavy Interest From a Light Investment," Harry E. Sterling, R. F. D., Durhamville, N. Y.

"Light Their Way, The Hens Will Pay," Kathryn L. Dunsmoor, Markesan, Wisc.

"Hen House Electrified, Profits Multiplied, Farmer Satisfied," Mrs. A. Tyepkema, R. 2, Arjsin, Wisc.

"A Light House Makes a Heavy Basket," Geo. E. Mirick, Box 5, Roebling, N. J.

"An Egg-Stended Day, The Electrical Way." Lyndon W. Sawyer, Sawyer Farms, Greene, Me.

And these deserve special commendation:

"The Electric Way, Makes the Hens Pay," Lydia M. Lantz, Cover, Oregon; "Big Light on Poultry Success," Mrs. Jason A. Bennett, R.F.D. No. 3, Buhl, Idaho; "Hens Will Pay, the Electric Way," Catherine Stewart, R.F.D. No. 2, Mukwonaga, Wis.; "Electric Rays Make Longer Days, and Busy Hens the Mortgage Raise," Mrs. W. H. Newcomer, R.F.D. No. 6, York, Nebr.; "A Basket Well Filled, and a Coop Well Lit, Prove That Electrified Farms Have Made a Hit," Mrs. A. H. Burkhart, R.F.D. 1, Oswego, Ill.: "High Lights in Poultry Profits," Mrs. E. J. Fruit, Platteville, Wis.; "Just Watch Your Hens Lay If You Lengthen the Day," Barbara Newhall, North Uxbridge, Mass.

My Title for July Front Cover picture is.....

.....

.....

.....

.....

.....

(a) How many chickens? (Fill in blank in space below)

On our farm, there are ..... chickens.

Name .....

Address .....

When I Wash

By Irma Herrick

TO save, wear, twisting and buttons, I put the clothes in my washing machine in a number of open mesh bags. By this method even my daintiest things may be safely trusted to my mechanical washlady. These bags I hang in a closet, and as the clothes are discarded during the week I sort them, putting each article in its proper bag. So now I put the bags of less soiled white things directly into the aluminum basket. In my machine, this basket revolves vertically through the hot, soapy water in the bottom of the tub. This rotary motion carries the clothes to the top of the basket and drops them down into the soapy water. This movement, combined with the constant action of the water, loosens the dirt, which falls to the bottom of the tub.

Now I empty the more soiled white things on a convenient shelf. While the hot water is running into the machine—by hose directly from the hot water faucet—I soap the dirtiest spots. The colored things I keep for a second washing. Then I put on the cover. Sister pulls the switch, her proud contribution to the day's labor. The steady whir and splash assure me that while I am upstairs making beds and putting things to rights, my electric washwoman will loosen every bit of dirt.

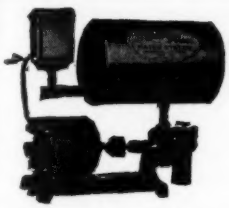
When I go downstairs again, at the end of fifteen minutes, the time taken for the washing operation, I stop the motor, uncover the machine, and move the basket to a horizontal position. Since the outlet hose hangs permanently on the sink I simply pull a lever, and the dirty water is pumped off while the clothes are being rinsed. This is very easily done by training a spray of water coming from the hot water faucet on the clothes in the basket. The basket is now spinning rapidly in its horizontal position. This operation takes about three minutes.

Now do you think I must take the time to put the clothes through a wringer? Not at all. I just let the same aluminum basket in which the clothes were washed and rinsed spin free for a minute, and the clothes are nearly dry, quite ready to hang.

I have pulled the plug to stop the drainage while there was enough hot water left in the tub for the second washing. So I add soap flakes, put in the remainder of the bags, and again start the motor. This time I use the fifteen minutes washing time to straighten up a bit in the kitchen and living room and give the baby his orange juice. After again rinsing and spinning, I am ready to hang my wash. I collect basket, pins, and three year old daughter, and go to the drying yard.

Not every Monday morning is sunshiny, however. Therefore, I am having a dryer constructed in the cellar to take care of the rainy ones. I am old-fashioned enough to prefer the outdoors for drying when it is clear, however. This dryer will be 6½ feet high, 4 feet wide and 3 feet deep. It will be a double walled box of galvanized iron, with the space between the two walls filled with Rockwool, an excellent insulation. The heating unit is in the bottom, and a ventilating window in the top to insure the circulation of warm air that makes the clothes sweet and odorless as well as dry. The double doors fold open, and the racks lift out so that it will be easy to hang the clothes on them. When I use this dryer, I will let the clothes spin in the washer a little longer than usual. Then there will be almost no moisture left in them, and it will take but a short time to complete the process of drying. Indeed, the Man of the House assures me that a period of not more than thirty minutes will be sufficient. Since the heating unit will be rated at 2500 watts, the cost will be little enough to pay for being able to laugh at the weather. When it is completed, my dryer will make it unnecessary to put off the washing until Tuesday, Wednesday or even Thursday, and will prevent a rainy Monday from spoiling a whole week.

I suppose you would like to know something about the cost of



ONLY $58

for the completely automatic water system shown here. Ideal for shallow wells and cisterns where water is within 22 ft. of the surface. Only two moving parts.

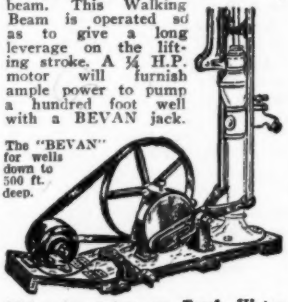
Many other sizes and styles of water systems, also septic tanks, water softeners, stock drinking cups, etc. Write for complete descriptive literature.

MILWAUKEE AIR POWER PUMP COMPANY
6 Keefe Ave., Milwaukee, Wis.

BEVAN Roller Bearing Pump Jacks

Fresh, running water, always available—without the tiresome labor of pumping. That's why BEVAN Electric Pumping Units are installed in so many rural homes soon as Electricity takes over the pumping job.

BEVAN jacks have a patented method of conveying motion to the pump by means of a walking beam. This Walking Beam is operated so as to give a long leverage on the lifting stroke. A ¾ H.P. motor will furnish ample power to pump a hundred foot well with a BEVAN jack.



The "BEVAN" for wells down to 500 ft. deep.

Write for prices on Fresh Water Systems and Electric Pumping Units.

ACME MACHINE CO.
2901 Fremont Ave. So., Minneapolis, Minn.

PETERSIME

New

CHALLENGER *Models*

Developed for you who want the Petersime Electric Incubator's higher hatching averages in bottom-tray styles. Last word in time-saving simplicity at new, low prices. Full details of these new Petersime models may be worth thousands of dollars to you. Send for new Petersime Year Book, the "Challenger," at once. It's free. Write for it NOW!

WELLINGTON J. SMITH CO., 936 Davis-Farley Bldg., Cleveland, Ohio

ELECTRICITY and a DAYTON Water System will provide your farm with the greatest convenience of all—*Running Water.* DAYTON Water Systems are made in a complete range of capacities for deep and shallow wells. Write for details.

The Dayton Pump & Mfg. Company
Pioneer Makers of Private Water Systems
Dayton, Ohio, U.S.A.

The DAYTON Unisystem made in four sizes.

The Surge Milker

New Way to Milk Cows

The Surge milks cows like no other machine ever milked cows before. NO long Tubes—NO claws! Produces clean, premium-priced milk with less work, less expense than any other milking machine. Equipped for any electric power at a very small extra cost.

Write for Free Demonstration Offer!

Pine Tree Milking Machine Co.
Dept. B-551, 2843 W. 19th St., Chicago, Ill.

operating the washing machine, too. We also had that curiosity, so the Man of the House—who is by way of being an electrician—connected a watthour meter so that only the power used by the washing machine was registered. We kept records over a number of months. The result was almost unbelievable. For ten washings, all of them of at least two tubs, the machine used 1.5 kw.-hrs. hardly enough to show on the bill. And the cost will be even less when we get a power meter, which we are applying for now that we have our electric range. This will cut the cost to about one third of the electric lighting rate.

But I must return to the clothes I am putting on the line. The last pin is in, the lines are full of clean, flapping clothes, and it is,—yes, just quarter of ten, and time for the baby's bath. Ten o'clock, and my washday is over. Not only that, but over without having hired any outside help, or having sent anything to an expensive laundry. The work is done, and with so little expenditure of energy that I feel the day has just begun, as indeed it has. And to electricity I owe the gift of these extra hours, and of the vitality with which I shall be able to enjoy them.

The Dursts Do It Differently

(*Continued from page* 14)

that the amount of grain blown into the straw stack was reduced to about .15 of one per cent of the grain threshed as compared to an average of 1% for ordinary threshing methods. This represents a difference of .85 of one percent or 8½ bushels of grain in each thousand bushels threshed. At ordinary prices for grain and ordinary farm rates for electric current, the value of this grain saved would be considerably more than the cost of electric power to thresh the 1000 bushels.

In these same tests the dockage was reduced to less than half of that ordinarily found.

"The small farmer needs his own machine even more than those big ranchers out west do," said John Durst emphatically. "I'm satisfied it's the best paying proposition for any farmer, big or small. The large threshing crew is going out. We'd never go back to the old way. This is easier and cheaper."

The New Hired Help in the Dairy

(*Continued from page* 24)

house and residence, adding to the convenience and lessening the time and labor required for the chores.

In the Richter household, the electric range banishes the empty wood box and brings a cool clean comfortable kitchen, especially appreciated during the hot summer months. Other appliances such as the iron, perculator and vacuum cleaner are provided to lighten Mrs. Richter's task as much as the five little electric hired maids lighten the work of the dairy.

All of this electric service on the Richter ranch costs only about 50 cents a day for the year.

The Richters say that the electric hired hands help more and cost less than any other service used in connection with the operation of their dairy farm.

To Retire Gasoline Engine

We hope in the near future to get an electric motor to put the water in the house and get rid of the gasoline engine which always requires a man to pump the water. Also want to get a churn and sweeper and put the electricity in the barn and chicken house.

Mrs. C. C. McCue,
Elkins, W. Va.

CLASSIFIED ADVERTISING

INVESTIGATE the proven records of economical operation and success of the **LYON IMPROVED ELECTRIC BROODERS.** Send for free authentic information and reports on electric brooding. Also **ALARMS**, Power-off, Temperature, Burglar, Heating & Thermostatic Supplies. Interesting circulars on modern poultry equipment upon request. Lyon Electric Co., Dept. FF, Box 1436, San Diego, Calif.

Make a Churn Out of Your Washing Machine

These electric freezers and churns are easily attached to your washing machine. It is only necessary to lift off the agitator and set it on the center post of any modern washing machine.

If your washing machine dealer can't supply you, write us, giving name of your washing machine.

COLE MANUFACTURING CO.
BIRMINGHAM, ALA.

SAFEGUARD

A 4 PURPOSE ALARM

1 Burglary
2 Failure of Current
3 Change in Brooder Temperature
4 Fire

Cannot be beaten in any known way; simple to install and economical to operate. Sold under money back guarantee. If your dealer can't supply you, write

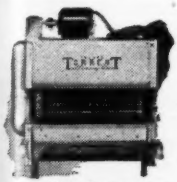
SAFEGUARD ALARM CO., Inc.
Council Bluffs, Iowa

A REMARKABLE WATER SYSTEM VALUE!

The Duro Fresh Flow, Automatic, Electric Water System has a capacity of 250 gallons per hour, and costs only $69.50 f.o.b. Dayton. It supplies fresh water direct from the well at all times. Completely automatic in operation. See it at your Duro dealers shop. Write to us for catalog. Choose Duro—without a fault.

THE DURO COMPANY
537 E. Monument Ave., Dayton, Ohio

DURO
Automatic Water Systems



Torrent Bunch Vegetable Washer A Truck Farm Need

Saves Its Cost in a Few Months.

Will increase your profits. Know more about this great time saver.

Felins Tying Machine Co.
1194-96 Fourteenth Street
Milwaukee Wisconsin

The LAUSON Electric Pump Jack

will convert your ordinary pump into a water supply unit, controllable all weather by a button in the house, that will unfailingly deliver all the water you want—deep or shallow well, it works equally well.

Built Like a High Grade Auto Transmission

Machine cut hardened gears, fully enclosed, running in oil. Bronze bearings. No chains or sprockets. High grade motor. Compare with all others. Write for special literature and prices.

Also complete Water Systems

The John Lauson Mfg. Co.
700 Michigan St., New Holstein, Wis.

Every progressive farm needs one

The Gillette Portable Electric Clipping and Grooming machine has a direct connected motor. Its reliability explains its popularity. Just plug into any lighting outlet—it is ready for work. Hanging or Pedestal types.

Dealers—Send for attractive price list.

Gillette Clipping Machine Co., Inc.
129 W. 31st St., Dept. 11, N. Y. City
40 Years Making Clipping and Grooming Machines

OAKES ELECTRIC BROODERS

Raise Healthy Chicks This Sure, Easy Way

Here's the latest. It's economical, automatic, fumeless, safe and sure.

Four Sizes—100 to 650 Chicks

Cat. No.	Size	Chick Capac.	Wt.	Each
G-90	22-in.	100 Chicks	15 lbs.	$10.50
G-91	32-in.	250 "	35 lbs.	16.00
G-92	42-in.	425 "	70 lbs.	20.00
G-920	52-in.	650 "	100 lbs.	24.00

Sold by electric appliance and poultry supply dealers or public utility companies. Write us for literature.

Oakes Mfg. Co., 77 D. St., Tipton, Ind.

What Our Readers Say

Emancipation

Rural electrification marks the farmers' emancipation from back-breaking labor and his entry into a new era of economic prosperity. It has given us perfect satisfaction in each and every way.

Miss L. Boddicker,
Watkins, Iowa.

* * *

Does the Work

Electricity on our farm furnishes light, runs the washing machine, heats the iron, runs the vacuum cleaner, pumps the water, turns the separator, and we hope in the future to have it run a range, a refrigerator, a radio and a milking machine and other conveniences if possible.

Mrs. Geo. Ambler,
Plain, Wisc.

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Refrigerator First

I feel the refrigerator has no comparison on the farm as getting ice is a problem in some places. Then it keeps things better than ice, and just as cheap for us.

Mrs. L. Alexander,
Ottawa, Kansas.

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Plan to Extend

There are many other things that I would like to see electricity employed for on our farm, such as running the cream separator, refrigerator, cooking, sewing, corn shelling, feed grinding, etc. I am trying to extend it as far as my purse allows.

Mrs. S. Steiner,
Pandora, Ohio.

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Household Helpers

I want an electric sewing machine, they are such a help to one that has much sewing to do, and I surely would like to have an electric stove. I have a friend that has one and like it so much. The electric washer is a wonderful help. I have seen them used. The country is just the place to live with the help of electricity.

Miss S. Culpepper,
Portsmouth, Va.

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Brings City Advantages

Four years ago we sold our city home and motored and camped up and down the Puget Sound country for three months looking for a location for growing bulbs. Having found it and started building our future home, you can imagine my joy when the wiring of the house was completed and a new neighbor loaned me her electric plate to use until our own stored household goods should arrive. Never did anything light up my smoked and windblown cooking spirits as that did. My vacuum sweeper which I came near selling in the city has served so well in keeping out the dirt and dust which is always such a trial when breaking in a new place. We expect this year to have an electric motor for running some of our bulb digging machinery. We have our own water system operated by an automatic electric pump, which furnishes us with water for both domestic use and sprinkling. We also have an electric toaster and hot plates and will add other electric labor savers as we are ready for them. Electricity brings all the advantages of the city to add to the joys of suburban living.

Mrs. H. R. Palmer,
Arlington, Wash.

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Old Washing Machine Motor Drives Corn Sheller

Herewith is a snapshot of m. corn sheller operated by an old washing machine motor, ¼ horse power in size. We also have an automatic electric water pump,

washing machine, vacuum cleaner and radio. We have had electricity on the farm for three years, and I enjoy reading your little magazine very much.

Thought you might be interested in this picture.

J. O. Wood,
Ottawa, Kans.